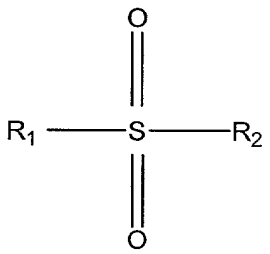
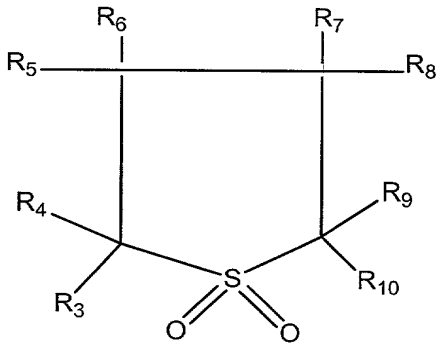
WHAT IS CLAIMED IS:

1. A composition for stripping photoresist and cleaning etch residue from substrates comprising from about 0.01 percent by weight to about 10 percent by weight of one or more fluoride compounds, from about 15 percent by weight to about 50 percent by weight water, from about 10 percent by weight to about 95 percent by weight of a compound which is either an organic sulfoxide corresponding to the following:



where R_1 and R_2 are H, OH or an alkyl, at least one of R_1 and R_2 is an alkyl, or a sulfone solvent corresponding to the following:



where R_3 - R_{10} are independently H or an alkyl group, and
and from about 0.1 to about 15 percent by weight of a basic amine compound.

2. The composition of claim 1 wherein said fluoride compound is ammonium fluoride and said organic sulfoxide is dimethylsulfoxide.

3. The composition of claim 2 wherein said basic amine compound is selected from the group consisting of hydroxylamine, hydrazine, 2-amino-2-ethoxy ethanol, monoethanolamine, diethylhydroxylamine, choline, tetramethylammonium formate, monoisopropanolamine, diethanolamine, triethanolamine.

4. The composition of claim 1 wherein the ratio of total solvent/amine to water is from about 1.5:1 to about 2.5:1.

5. The composition of claim 2 wherein said composition comprises about 3.5% by weight of a 40% aqueous solution of ammonium fluoride, about 65.5% by weight dimethylsulfoxide, about 28.5% water, and about 2.5% 2-amino 2-ethoxyethanol.

6. A composition for etching metal or oxide comprising from about 7.5 percent by weight to about 10 percent by weight of one or more fluoride compounds, from about 15 percent by weight to about 50% by weight water, and from about 10 percent by weight to about 95% by weight of an organic sulfoxide or sulfone solvent.

7. The composition of claim 1 wherein said composition comprises about 3.5% by weight of ammonium fluoride, about 65.5% by weight dimethylsulfoxide, about 28.5% water, and about 2.5% 2-amino 2-ethoxyethanol.

8. The composition of claim 3 wherein said basic amine compound is choline.

9. The composition of claim 1 further comprising a chelating agent selected from the group consisting of gallic acid, catechol tetrabutyl phosphonium hydroxide and dicarbethoxyhydrazine.

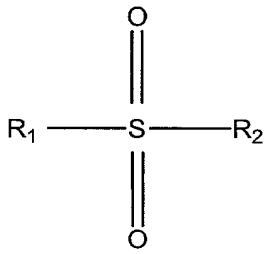
10. The composition of claim 1 further comprising a co-solvent selected from the group consisting of acetic acid, methyl acetate, methyl lactate, ethyl acetate, ethylene glycol diacetate, ethyl lactate, propylene glycol, propylene carbonate, N-methyl pyrrolidone, methoxyethoxyethanol and polyethylene glycol monolaurate.

11. A method of removing a photoresist coating from a substrate using the composition of claim 1.

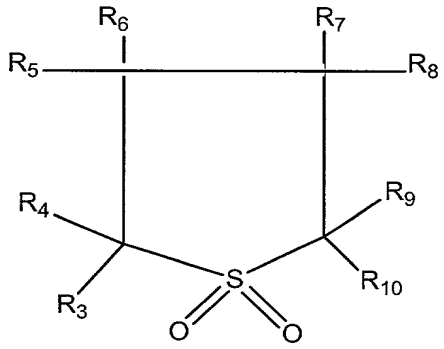
12. A method of removing etch residue from a substrate using the composition of claim 1.

13. A method of etching silicon oxide using the composition of claim 1.

14. A composition for stripping photoresist and cleaning etch residue from substrates comprising from about 0.01 percent by weight to about 10 percent by weight of one or more fluoride compounds, from about 15 percent by weight to about 50 percent by weight water, from about 10 percent by weight to about 95 percent by weight of a compound which is either an organic sulfoxide corresponding to the following:



where R_1 and R_2 are H, OH or an alkyl, at least one of R_1 and R_2 is an alkyl, or a sulfone solvent corresponding to the following:



where R_3 - R_{10} are independently H or an alkyl group, and a co-solvent.

15. The composition of claim 14 wherein the co-solvent is present in an amount from about 0.1 to about 60 percent by weight.

16. The composition of claim 15 wherein the co-solvent is selected from acetic acid, methyl acetate, methyl lactate, ethyl acetate, ethylene glycol diacetate, ethyl lactate, propylene glycol, propylene carbonate, N-methyl pyrrolidone, methoxyethoxyethanol and polyethylene glycol monolaurate.

17. The composition of claim 16 wherein said fluoride compound is ammonium hydrogen fluoride and said organic sulfoxide is dimethylsulfoxide.

18. The composition of claim 16 wherein said fluoride compound is ammonium fluoride and said organic sulfoxide is dimethylsulfoxide.

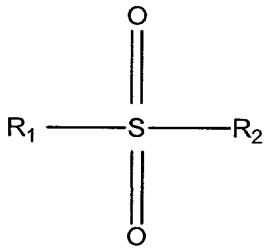
19. The composition of claim 14 further comprising a chelating agent selected from the group consisting of gallic acid, catechol, tetrabutyl phosphonium hydroxide and dicarbethoxyhydrazine.

20. A method of removing a photoresist coating from a substrate using the composition of claim 14.

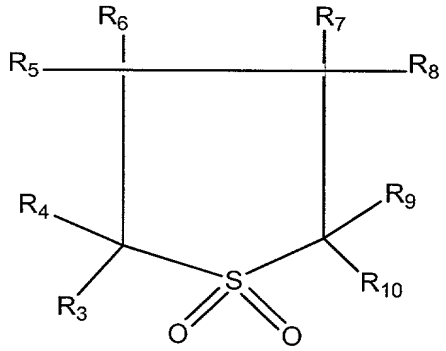
21. A method of removing etch residue from a substrate using the composition of claim 14.

22. A method of etching silicon oxide using the composition of claim 14.

23. A composition for stripping photoresist and cleaning etch residue from substrates comprising from about 0.01 percent by weight to about 10 percent by weight of ammonium hydrogen fluoride, from about 15 percent by weight to about 50 percent by weight water and from about 10 percent by weight to about 95 percent by weight of a compound which is either an organic sulfoxide solvent corresponding to the following:



where R_1 and R_2 are H, OH or an alkyl, at least one of R_1 and R_2 is an alkyl or sulfone solvent corresponding to the following:



where R_3 - R_{10} are independently H or an alkyl group.

24. The composition of claim 23 wherein the organic sulfoxide is dimethylsulfoxide.

25. The composition of claim 24 wherein the composition further contains a co-solvent selected from the group consisting of acetic acid, methyl acetate, methyl lactate, ethyl acetate, ethylene glycol diacetate, ethyl lactate, propylene glycol, propylene carbonate, N-methyl pyrrolidone, methoxyethoxyethanol and polyethylene glycol monolaurate.

26. The composition of claim 24 wherein the composition further contains a basic amine compound selected from the group consisting of hydroxylamine, hydrazine, 2-amino-2-ethoxy ethanol, monoethanolamine, diethylhydroxylamine, choline, tetramethylammonium formate, monoisopropanolamine, diethanolamine, and triethanolamine.

27. The composition of claim 24 further comprising a chelating agent selected from the group consisting of gallic acid, catechol, tetrabutyl phosphonium hydroxide and dicarbethoxyhydrazine.

28. The composition of claim 24 wherein the composition further contains from about 30 to about 60 percent by weight ethyl lactate.

29. A method of removing a photoresist coating from a substrate using the composition of claim 23.

30. A method of removing etch residue from a substrate using the composition of claim 23.

31. A method of etching silicon oxide using the composition of claim 23.